

Sheet 2

(Functions)

Problem 1

```
// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
// This program used to compute the area of a rectangle
#include<iostream.h>
int Area(int length, int width);

void main()
{
    int x,y;
    int RecArea;
    cout<<"Enter the length and the width: ";
    cin>>x>>y;
    RecArea = Area(x,y);
    cout<<"The area is : "<<RecArea;
}

int Area(int length, int width)
{
    return length*width;
}
```

Problem 2

```
// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
// This program used to compute the area of a circle
#include<iostream.h>
float Area(float r);

void main()
{
    float r,circle;
    cout<<"Enter the radius of the circle: ";
    cin>>r;
    circle = Area(r);
    cout<<"The area of the circle is : "<<circle;
}

float Area(float r)
{
    return 3.14 * r * r;
}
```

Problem 3

```
// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
// This program used to receive the data from the user and print them
#include <iostream>
#include <string>
using namespace std;

void MyCV(string name1, string name2, int age, string job);

void main()
{
    string FirstName, SecondName, Job;
    int age;
    cout<<"Enter your First name, and Second name: ";
    cin>>FirstName>>SecondName;
    cout<<"Enter your Age and Job: ";
    cin>>age>>Job;
    MyCV(FirstName, SecondName, age, Job);
}

void MyCV(string name1, string name2, int age, string job)
{
    cout<<"My name is: "<<name1<<" "<<name2<<endl;
    cout<<"I am "<<age<<" Years old"<<endl;
    cout<<"My job is: "<<job<<endl;
}
```

Or

```
// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
// This program used to print a data from the program
#include <iostream>
#include <string>
using namespace std;

void MyCV(string name1, string name2, int age, string job);

void main()
{
    MyCV("Dina", "Mahmoud", 30, "Engineer");
}

void MyCV(string name1, string name2, int age, string job)
{
    cout<<"My name is: "<<name1<<" "<<name2<<endl;
    cout<<"I am "<<age<<" Years old"<<endl;
    cout<<"My job is: "<<job<<endl;
}
```

Problem 4

```
// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
// This program used to get the maximum number of 4 numbers
#include<iostream.h>

float max(float x, float y);

void main()
{
float a,b,c,d,z1,z2,maximum;
cout<<"Enter the four number: ";
cin>>a>>b>>c>>d;
z1=max(a,b);
z2=max(c,d);
maximum=max(z1,z2);
cout<<"The Maximum number is : "<<maximum<<endl;
}

float max(float x,float y)
{
    if (x>y)
        return x;
    else
        return y;
}
```

Or

```
// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
// This program used to get the maximum number of 4 numbers
#include<iostream.h>
float max(float x, float y);
void main()
{
float a,b,c,d,maximum;
cout<<"Enter the four number: ";
cin>>a>>b>>c>>d;
maximum=max(max(a,b),max(c,d));
cout<<"The Maximum number is : "<<maximum<<endl;
}

float max(float x,float y)
{
    if (x>y)
        return x;
    else
        return y;
}
```

Problem 5

```
// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
// This program used to Check a character if Digit, Small letter, or
// Capital Letter
#include<iostream.h>

int WhatIsChar(char c)
{
    if (c>='0' && c<='9') return 1;
    else if (c>='A' && c<='Z') return 2;
    else if (c>='a' && c<='z') return 3;
    else return 0;
}

void main()
{
    while(1)
    {
        char c;
        cout<<"Enter char to check , and to end enter any symbol: ";
        cin>>c;
        if (WhatIsChar(c)==1)
            cout<<"It is a Digit."<<endl;
        else if (WhatIsChar(c)==2)
            cout<<"It is a Capital Letter."<<endl;
        else if (WhatIsChar(c)==3)
            cout<<"It is a Small Letter."<<endl;
        else break;
    }
    cout<<"You End The Process.....";
}
```

Problem 6

```
// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
// This program used to Find Square root, sin, and logarithm of a
number
#include<iostream.h>
#include<math>    //or <math.h>

void main()
{
    const double Pi=3.14;
    double x;
    cout<<"Enter the number: ";
    cin>>x;
    cout<<"Sin "<<x<<" = "<<sin(x*Pi/180)<<endl;
    cout<<"*****"<<endl;
    cout<<"The square root of "<<x<<" = "<<sqrt(x)<<endl;
    cout<<"*****"<<endl;
    cout<<"ln "<<x<<" = "<<log(x)<<endl;
    cout<<"*****"<<endl;
}
```

Other Math Functions

```
#include<iostream.h>
#include<cmath> // or <math.h>

void main()
{
    cout<<"10 ^ 2 is : "<<pow(10,2)<<endl;
    cout<<"*****"<<endl;
    cout<<"Remainder of 10 / 2 is : "<<fmod(10,2)<<endl;
    cout<<"*****"<<endl;
    cout<<"The biggest number near to 99.5 is : "<<ceil(99.5)<<endl;
    cout<<"*****"<<endl;
    cout<<"The smallest number near to 99.5 is : "<<floor(99.5)<<endl;
    cout<<"*****"<<endl;
}
```